

PREDATOR ECOLOGY, CONSERVATION AND MANAGEMENT

DETECTING METHODS FOR AN OPPORTUNISTIC AND EXPANDING MESOCARNIVORE IN SW EUROPE: THE EGYPTIAN MONGOOSE (*Herpestes ichneumon*)

Esther Descalzo¹, Miguel Delibes-Mateos², Francisco Díaz-Ruiz³, José Jiménez¹, Pablo Ferreras¹

¹Instituto de Investigación en Recursos Cinegéticos IREC, CSIC-UCLM-JCCM, Ciudad Real, Spain

²Instituto de Estudios Sociales Avanzados IESA-CSIC, Córdoba, Spain

³Universidad de Málaga, Departamento de Biología Animal, Málaga, Spain

The Egyptian mongoose (*Herpestes ichneumon*) is the only Herpestidae species that occurs naturally in Europe. Traditionally, it occurred only in the SW Iberian Peninsula, from where it is expanding. However, its situation is unclear in central Spain, where hunters complain because of its alleged impact on small game species. To clarify the species distribution and assess its expansion, efficient detection methods are needed. We compared the performance of four detection methods: 1) sign surveys on transects on-foot, 2) baited camera-traps and 3) hair-traps, either baited or 4) unbaited. We replicated these methods in ten sampling units within four study areas. One-kilometre transect was surveyed in each sampling unit (i.e. 10 per study area), searching for mongoose faeces and footprints. We deployed a baited camera-trap, a double baited hair-trap and a single unbaited hair-trap in each transect. These detecting devices were weekly checked during a month, and walking transects were biweekly surveyed. All the methods detected the species in some of the study areas. An occupancy framework was used to estimate method-specific probabilities of detection (P). Baited hair-traps were the most efficient method (mean $P \pm SD$: 0.40 ± 0.07) followed by sign surveys on foot (0.30 ± 0.06). Camera-traps (0.26 ± 0.06) and unbaited hair-traps (0.22 ± 0.09) were the least efficient methods. Variability in detectability among study areas of sign surveys was high, whereas it was low for baited double hair-traps. Considering the cost, efficiency and variability of each method, we recommend a combination of baited hair-traps and sign surveys as the most efficient alternative to detect Egyptian mongooses in southern Europe.